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STATE OF MISSOURI

Bob Holden, Governor • Stephen M. Mahfood, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.state.mo.us

November 13, 2001

Mr. Mark Weatherly
Office of Management and Budget
Executive Office of the President
NEOB 8002
725 17th Street, NW
Washington, DC 20503

Re: Environmental Management Budget Request for Department of Energy's Weldon Spring Site

Dear Mr.Weatherly:

I am writing to alert you to several concerns (see Attachment A) regarding the Department of Energy's (DOE) FY 2003 Budget Request for the Weldon Spring site in Missouri, and to urge you to examine this budget carefully to ensure it is adequate for the long-term needs at the site. The Weldon Spring site has been funded from DOE's budget for the Environmental Management (EM) program. As the EM program completes remediation at sites like Weldon Spring, continued funding is required to support long-term stewardship work necessary for ensuring continued protection of human health and the environment.

We are concerned DOE may not have adequately considered the budget requirements for its continuing long-term stewardship obligations after remediation has been completed. Since the DOE has not yet prepared a long-term stewardship plan that could establish the baseline technical scope of work on which this budget would be based, it is not clear how DOE could have developed a defensible budget request. Moreover, the DOE has failed to share their initial budget request estimates with us. Consequently, we are unable to make any direct judgment of its adequacy based on analysis.

The urgency of our budget concern arises now because of a confluence of timing between the annual budget preparation process and the expected completion of the remediation at the Weldon Spring site, which is now scheduled for September 30, 2002. Consequently, the FY 2003 budget is a critical watershed budget year for the Weldon Spring site. After years of relatively stable budgets, the funding for the Weldon Spring site is appropriately expected to drop upon completion of remedial work at the site. This funding drop is one of the happy consequences

of the skill and industriousness of the workers and managers involved in the cleanup. However, the funding should not be "zero" and should be based on a rigorous, approved plan for providing long-term stewardship.

The Weldon Spring remediation has involved consolidating more than a million cubic yards of nuclear waste from two significant sites into a 47-acre on-site disposal cell, which is about seven stories high. Hence, DOE will need to continue to perform post-cleanup monitoring, maintenance, and other long-term stewardship activities indefinitely. We urge you to ensure there is adequate funding to perform these tasks. DOE's task requires not only standard surveillance and maintenance, but also includes continuing investments in science and technology, while abiding by its commitment to use the broader principles in the recent National Academy of Sciences report as a "blueprint."

The Weldon Spring site budget may have implications beyond this one site or simply the dollars directly involved. The Weldon Spring site is the first large and technically complex site where DOE will complete cleanup and begin long-term stewardship. Consequently, the regulators and communities at other sites (e.g., Rocky Flats and Fernald Sites) may be looking carefully at the Weldon Spring site budget process to gauge whether the strategy of on-site capping of waste is prudent, based on the robustness of DOE's commitment to ensure post-closure protection of human health and the environment. Other states could refuse to allow DOE simply to contain waste on site, and instead require DOE to move all wastes off-site, thereby dramatically increasing the costs to cleanup DOE sites. This might not be technically or economically optimal, but would be understandable, given the states' and EPA's mandate to protect human health and the environment. It would be unfortunate if cleanup at other sites were slower and more costly because of the inadequacy of a relatively small post-closure budget.

Finally, the use of a non-defense budget account to fund the post-closure stewardship work at the Weldon Spring site is inappropriate and likely to be inadequate. While this use of non-defense money for defense sites has been inappropriate from the start, it has not had significant implications due to the relatively small amounts of money involved. The state of Missouri has not been concerned about this because DOE's Weldon Spring remediation has proceeded apace, and the adequacy of public health protection, not the source of funds, is our primary concern. Now, however, as remediation is completed at more sites, the budget for long-term stewardship is expected to grow considerably. We are concerned that continued funding of long-term stewardship with non-defense funds particularly at defense facilities is inappropriate and could lead to critical budget shortfalls. The shortfalls are likely because of the relatively lower visibility of the budget requirements for long-term stewardship at sites where most observers incorrectly assume the site is "cleaned up." Moreover, the non-defense side of the EM budget is traditionally lower than the defense accounts. Defense sites should not become a non-defense budget liability due to cleanup, long-term stewardship, or both. We urge you to direct DOE to adjust their budget request to move the long-term stewardship (a.k.a. "long-term surveillance and maintenance") budget to the defense part of the FY 2003 budget request.

Thank you for your consideration of these issues. Please do not hesitate to contact me at 573-751-4732, if you have any questions. Your staff may also contact Mr. Ron Kucera, Deputy Director, at 573-751-3195.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES

Original signed by Stephen Mahfood

Stephen Mahfood
Director

SM:rgp

Enclosure

c: Assistant Secretary Jessie Hill Roberson, Department of Energy, EM-1
Mr. Gerald Boyd, Department of Energy, EM-50
Mr. Jim Fiore, Department of Energy, EM-30
Mr. Rod Nelson, Department of Energy, Oak Ridge Office
Mr. Gene Schmitt, Department of Energy, EM-10
Ms. Donna Bergman-Tabbert, Department of Energy, Grand Junction Office

ATTACHMENT A
WELDON SPRING SITE BUDGET ISSUES

Background

The Weldon Spring site is located in St. Charles County, Missouri, about 30 miles west of St. Louis. The site consists of two geographically distinct areas: the 217-acre chemical plant area and a nine-acre limestone quarry, which is about four miles south-southwest of the chemical plant. The Weldon Spring site has had three distinct phases of operation, and is about to enter a fourth, and terminal phase, for long-term stewardship:

- 1941-1945 (4 years): World War II munitions[1]
- 1956-1966 (10 years): nuclear weapons materials processing (1956-1966); and
- 1985-present (17 years): environmental remediation

The annual Department of Energy (DOE) budget for Weldon Spring has remained a relatively constant level of $50-60 million for much of this cleanup period (See Table A1).[2] The Weldon Spring site has been unusual among DOE cleanups because the staff and contractors have made relatively steady progress toward completion of cleanup and have adhered to cleanup schedules. The Weldon Spring staff indicated in 1994 that it intended to "Complete all Environmental Restoration activities by FY 2003."[3] Most recently, Weldon Spring staff indicated they expected to meet this schedule for completion of remediation and commencement of long-term stewardship.[4]

TABLE A1. WELDON SPRING BUDGET

Fiscal Year (thousands)

1995	1996	1997	1998	1999	2000	2001	2002	2003
55,000	58,500	67,500	NA	67,500	55,299	52,997	43,000	1,006

Source: DOE, *Congressional Budget Request,* various years.
Note: All figures reflect adjusted appropriated amounts, except FY 2002, which indicates the requested amount.

The Weldon Spring cleanup has involved consolidating 1.5 million cubic yards of nuclear waste into a 47-acre on-site disposal cell that is about seven stories high – now a prominent feature on the landscape of St. Charles County, Missouri. Hence, DOE will need to continue to perform post-cleanup monitoring, maintenance, and other long-term stewardship activities.

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[1] See http://www.em.doe.gov/wssrap/wsshist.html

[2] The Army is responsible for environmental remediation at the adjacent former TNT plant.

[3] *DOE, Estimating the Cold War Mortgage: The Baseline Environmental Management Report,* DOE/ EM-0232, March 1995, Volume II at page MO-22. Although this report was released in 1995, DOE field offices submitted the underlying data to the DOE office compiling the information by October 1994.

[4] *DOE/EM, Report to Congress on Long-term Stewardship, DOE/EM-0563,* January 2001, Volume II at page MO 19.

Continuing Budget Needs for Weldon Spring Site

The FY 2002 budget request for Weldon Spring environmental remediation was $43 million, which is down nearly 20 percent from FY 2001.[5] After years of relatively stable budgets, the funding for the Weldon Spring site is appropriately expected to drop upon completion of remedial work at the site at the end of FY 2002. This funding drop is the result of the skill and industriousness of the Weldon Spring workers and managers involved in the cleanup. No information is available publicly, however, on the FY 2003 budget request, which is the watershed year marking the beginning of post-remediation long-term stewardship activities.

The DOE, with regulators, has not yet determined the specific tasks required for long-term stewardship at the site. Consequently, DOE's budget request must necessarily be speculative because the budget should be based on funding needs to support the required tasks using a validated baseline. Since DOE has already submitted to Office of Management and Budget (OMB) a draft budget request for long-term stewardship at the Weldon Spring site, it has implicitly committed to a certain path forward without the appropriate technical analysis or obtaining review or approval by the state or EPA.

The DOE has offered widely varying estimates for the costs of the required long-term stewardship activities at the Weldon Spring site. DOE's initial life-cycle cost estimates for Weldon Spring deferred any estimate of post-closure costs until a final Comprehensive Environmental Response, Compensation and Liability Act Record of Decision on groundwater had been signed, then expected in FY 1999.[6] In 2000, the Weldon Spring site staff estimated its annual long-term stewardship costs at approximately one million dollars per year ($1.006 million *site-wide, $334,257 for the quarry site, and $*671,332 for the chemical plant[7]). Most recently, in July 2001, DOE's Weldon Spring staff estimated a 54 percent increase in the expected costs for long-term stewardship.[8] DOE staff has not provided adequate technical details on the basis for these varying estimates to determine the reason for the increase in estimated costs.

The significance of the Weldon Spring budget is beyond merely the single site or the dollars directly involved. If DOE understates the post-closure requirements for Weldon Spring, it will send a signal to other sites that any cleanup strategy, which results in residual waste on-site, is risky due to DOE's lack of commitment to ensuring effective long-term stewardship. As you know, DOE's strategy has been to complete cleanup at a limited number of sites (e.g., Rocky Flats, Fernald and Weldon Spring) in order to reduce the overhead, or "mortgage" costs, thereby freeing up funds to be used for long-term cleanups, such as Hanford. This strategy will get its first test next year when the "cleanup" at Weldon Spring is scheduled for completion. The Weldon Spring site is the first large and technically complex site where DOE will complete

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[5] DOE/Office of Chief Financial Officer, *Department of Energy FY 2002 Congressional Budget Request; Environmental Management*, DOE/CR-0076, April 2001, at Volume 5, page 781.

[6] *DOE, The* 1996 *Baseline Environmental Management Report*, DOE/EM-0290, June 1996, Volume II at page MO-27.

[7] DOE/EM, Report to Congress on Long-term Stewardship, DOE/EM-0563, January 2001, Volume II at page Missouri 23, 26 and 28. DOE field staff submitted the data for this report in mid-2000.

[8] DOE, Weldon Spring Site Stewardship Document for Operations and Maintenance, Rev.0, DOE/OR/21548-771, and Rev.1, July 2001, Appendix A. The increase may be as little as 34 percent, if a 10 percent contingency and 5 percent fee are not included in the costs estimates.

cleanup and begin long-term stewardship. DOE must balance the appropriate decrease in funding for Weldon Spring, so it can be reallocated to other sites to help accelerate cleanup with the long-term needs of the Weldon Spring budget. DOE's long-term stewardship budget for Weldon Spring site must also not be reduced so much it undermines DOE's credibility to ensure adequate level of long-term stewardship following cleanup. If DOE's fails to establish and fund an adequate long-tem stewardship program at the Weldon Spring site, it will send a powerful signal to other states that DOE's promises cannot be trusted. This could cause other states to refuse to allow DOE to simply contain waste on-site, and to require DOE to move all wastes off-site, thereby dramatically increasing the costs to cleanup DOE sites. This would not be technically or economically optimal, but would be understandable, given the states' and EPA's mandates to protect human health and the environment. Moreover, it would be unfortunate if cleanup at other sites were slowed because of the inadequacy of a relatively small post-closure budget.

Previously, DOE has indicated it is committed to ensuring there is adequate funding to perform long-term stewardship tasks and continuing investments in science and technology.[9] Moreover, DOE is committed to use the recent National Academy of Sciences report[10] as a "blueprint."[11] Now, it is not clear DOE will be able to develop an effective long-term stewardship plan in time for the scheduled completion of cleanup at the site in September 2002. DOE has not provided any information on its FY 2003 budget or an adequate plan, which could serve as the basis for developing a budget request.[12]

[9] Huntoon, Carolyn L., DOE Assistant Secretary for Environmental Management, U. S. Department of Energy, Prepared Statement to the Senate Armed Services Committee, Subcommittee on Strategic and Nuclear Deterrence, 27 June 2001.

[10] National Academies National Research Council, Board on Radioactive Waste Management, Committee on the Remediation of Buried and Tank Waste, *Long-Term Institutional Management of the U.S. Department of Energy Legacy Waste Sites*, August 2000.

[11] Huntoon, Carolyn L., DOE Assistant Secretary for Environmental Management, Letter to Kevin Crowley, The National Academies, National Research Council, Board on Radioactive Waste Management, August 2000.

[12] See comments provided by the Missouri State Department of Natural Resources (Stephen Mahfood, Director) to Ms. Jessie Hill Roberson, DOE/EM-1 and Ms. Pam Thompson, DOE/ Weldon Spring, September 27, 2001.

Non-defense Funding

The DOE's non-defense Environmental Management (EM) account ("270") has been used to fund: (1) defense-related activities, such as the Weldon Spring cleanup, and (2) most of DOE's long-term surveillance and maintenance (i.e., stewardship) program. These two past problems, if unaddressed, will grow into more serious problems in the future.

First, the continued use of non-defense dollars for funding the continuing requirements at the Weldon Spring site is inappropriate and unworkable, as a reliable source of funding for the continued long-term stewardship obligations at the site. It is unworkable because of the decreasing dollars available for discretionary non-defense activities and the equally vanishing visibility for EM dollars at Weldon Spring. The need for a Weldon Spring budget will become less visible as it becomes wholly a stewardship budget instead of a cleanup budget. DOE staff and OMB examiners may question the need to fund a site in the EM "cleanup budget" where "cleanup" has ostensibly been "completed." Non-defense discretionary funding has always been smaller than the defense budget, and this pattern could become more pronounced as the United States funds a variety of increased security measures. For FY 2003, the non-defense portion of the EM budget is only four percent of the total EM budget.[13] Competing for these vanishing dollars could become more difficult, thereby placing in jeopardy the continued support for Weldon Spring's long-term stewardship program. This competition for dollars will be particularly stiff because DOE staff and contractors get "credit" from DOE senior management and Congressional appropriations and authorizing committees for completing cleanup, not funding post-cleanup stewardship work.

The use of non-defense accounts is inappropriate because Weldon Spring is a former defense nuclear weapons material productions site; it never had any non-defense missions, and the environmental legacy at Weldon Spring is a direct result of the site's former nuclear weapons mission. As the history of the Cold War is rapidly fading into the past, which is faster than the resulting waste is decaying, it is useful to review the role of the Weldon Spring site as a nuclear weapons material production site.

The Weldon Spring site was one of two facilities, along with the Fernald Plant in Ohio, built in the 1950s to consolidate uranium and thorium refining operations from a variety of contractor-owned facilities used since the Manhattan Project. These private facilities included the historic Mallinckrodt Plant in downtown St. Louis, which provided the refined uranium used by Enrico Fermi in the world's first controlled chain-reaction in the University of Chicago's Stagg Field CP-1 reactor during World War II.[14] The Weldon Spring site operated for nuclear weapons purposes from 1956 to 1966, when it was deactivated after losing a direct production competition with the Fernald Site. Weldon Spring's uranium refining operation involved converting "yellow cake" uranium ore concentrates (unrefined U_3O_8) to $U0_3$ and $U0_2$. Some of this refined uranium

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[13] Total non-defense EM = $228.553 million. Total EM = 5,912.701 million. See DOE/Office of Chief Financial Officer, *Department of Energy FY 2002 Congressional Budget Request; Environmental Management,* DOE/CR-0076, April 2001, at Volume 5, page 76-77.

[14] See generally, Rhodes, Richard, *The Making of the Atomic Bomb,* Simon and Shuster, *New York, 1986;* January 1997; *DOE, The* 1996 *Baseline Environmental Management Report,* DOE/EM-0290, June 1996; and DOE, *"Closing the Circle on the Splitting of the Atom: The Environmental Legacy of Nuclear Weapons Production in the United States and What the Department of Energy is Doing About it",* DOE/EM-0266, January 1996.

was converted to uranium hexafluoride (UF_6) for enrichment into weapons-grade uranium (higher than 20 percent enrichment). Weldon Spring plant's other principle product was uranium ingots (low-enriched, and "natural – i.e., 0.7 percent U-235). These ingots were extruded off-site and shipped to Hanford and the Savannah River site for cladding and assembling into target and fuel rods in production reactors. These reactors produced plutonium and tritium production for nuclear weapons.[15] The uranium processed there was used entirely for the United States' nuclear weapons program, hence the use of non-defense accounts is inappropriate for either cleanup or long-term stewardship.

Prior to its nuclear weapons mission, the chemical plant area was used by the Army during the 1940s to produce the explosives trinitrotoluene and dinitrotoluene. The Weldon Spring site never had any non-defense missions.

The second problem with the use of non-defense dollars for long-term stewardship at the Weldon Spring site is it is part of the larger long-term stewardship program being inappropriately funded with non-defense dollars. According to DOE, "[t]he Grand Junction Office will be administering the long term work at the site" after the scheduled completion of remediation in September 2002.[16] The DOE's long-term surveillance and maintenance program at the Grand Junction office is funded wholly from the DOE's non-defense "Post-2006" account. The funding source is a historical artifact of the use of non-defense funds for remediation of "Title I" uranium mill tailings sites. This funding source has always been inappropriate, since these sites were used exclusively for support of the U.S. nuclear weapons program, not supplying fuel for commercial reactors.[17] Nonetheless, it is clear the demand on this long-term surveillance and maintenance program will continue to grow, largely as a result of defense sites where remediation will be completed in the near future.[18] As cleanup at these defense sites is completed, responsibility will be transferred to the DOE's Grand Junction Office. If Grand Junction continues to be responsible for post-cleanup, long-term stewardship and funded from non-defense accounts, the site responsibility transfers will largely be transfers from defense accounts (e.g., Rocky Flats, Mound and Fernald from the Defense Closure Account) to a non-defense account. Such transfers from defense cleanup accounts to non-defense accounts cannot be accommodated within relatively small non-defense budget targets. Failing to address this growing problem now will inevitable result in short changing non-defense cleanup or long-term stewardship or both.

Science and Technology Needs

DOE's need for long-term stewardship arises from a recognition that complete cleanup at most sites is technologically unfeasible or economically imprudent or both. Instead of seeking the

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[15] DOE, *Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes to Their Environmental Consequences*. DOE/EM-0319; and Cochran, Thomas B., et al., *U.S. Nuclear Warhead Facility Profiles*, Ballinger Publishing Company, Cambridge, MA, 1987.

[16] See http://www.em.doe.gov/wssrap/steward.html

[17] The cleanup of uranium mill tailings sites was performed under Title I of the Uranium Mill Tailings Reclamation and Control Act, which applies to sites that had ceased uranium production operations by 1978. The DOE long-term surveillance and maintenance program will also address Title II sites, which were cleaned up by private companies.

[18] The numbers of site requiring long-term stewardship by DOE is expected to grow from 34 sites (mostly uranium mills tailings sites) to at least 67 sites by 2006, and to 129 sites by 2050. See DOE/EM, *Report to Congress on Long-term Stewardship*, DOE/EM-0563, January 2001, Volume I at page 3-2.

impossible goal of pristine cleanup, regulators, DOE, and the community have often settled on a remedial approach where the site is cleaned up and stabilized as much as technically and economically feasible to meet applicable and relevant standards. Then continue investing in science and technology, which could help reduce the costs of monitoring and maintenance or result in more permanent remedies in the future.[19]

The DOE has failed, however, to fund the appropriate means for any program to integrate science and technology investments in the long-term stewardship requirements at the Weldon Spring site. This lack of participation by the Weldon Spring Site in the department's efforts to develop and use new science and technology stands in stark contrast to the effort being made at other sites, where closure is not as imminent. At the Fernald site, for example, DOE has conducted extensive research on ensuring the sensor devices were replaceable and robust.

The Fernald site and the Weldon Spring site have significant similarities in their wastes, contamination, remedial technology, and planned end state, except Fernald cleanup will not be completed for five years. At the Fernald site, DOE has invested significant funding towards identifying useful science and technology and examining opportunities to apply them. This effort has included extensive collaboration with the subsurface focus area at the Savannah River site, integration of the remedial design with state-of-the art sensor technologies, and extensive hydrogeological modeling. For example, DOE has sponsored the 2nd Annual Fernald Post-Closure Stewardship Technology Project Symposium featuring senior DOE staff from Headquarters and multiple field offices, contactors, regulators, academic scientists, citizen stakeholders, and international officials. Also, DOE's Technology Management System fails to include any listing for the Weldon Spring site,[20] suggesting DOE believes there is no need for further study of the groundwater situation, sensors, potential health or environmental impacts, or cleanup technologies at Weldon Spring. In fact, all of these are ripe areas for study.

DOE's management of the Fernald site with a high degree of attention to developing and using state-of-the-art science and technology is appropriate. A comparable amount of attention to science and technology should also be applied to the Weldon Spring site. This high level of attention at Fernald to ensure advanced science and technology investments and utilization, then failure to give at least comparable attention to the Weldon Spring site is a double standard.

Budget Development Process For Weldon Spring Was Inadequate

The involvement of OMB is required because of the manner in which DOE assembled its FY 2003 budget for the Weldon Spring site. Prior to when the DOE transmitted its initial request to OMB for review, DOE had previously involved regulators and the community in developing the initial budget request. Typically this begins in early September, thereby beginning a "black out" period until the final request is released in early February. We understand the need to protect the deliberative process in the Executive Office of the President so that the

[19] Huntoon, Carolyn L., DOE Assistant Secretary for Environmental Management, U. S. Department of Energy, Prepared Statement to the Senate Armed Services Committee, Subcommittee on Strategic and Nuclear Deterrence, 27 June 2001, at page 14.

[20] http://tms.em.doe.gov/Home/Entry.asp

Administration retains adequate discretion about assembling the budget and balancing competing needs. On the level of individual DOE sites, such as Weldon Spring, the process of involving regulators and stakeholders early in the process has been helpful for both parties in understanding the needs and the tradeoffs as the budget is developed. Unfortunately, DOE has failed to share their initial request estimates with us. Consequently, we are unable to make any direct judgment of its adequacy based on analysis.

The OMB typically beings its review its formal budget review in September, and provides its "pass back" review of DOE's draft budget request in November. If OMB fails to provide adequate guidance to DOE regarding its FY 2003 budget request, then intervention by Congress will be required to address these as serious problems and ensure the FY 2003 budget for Weldon Spring and other requirements are adequately met. This Congressional intervention, at a late state during mark up of the FY 2003 budget development, could have a secondary "ripple effect," consequences on other parts of the DOE's budget, and so would be preferable to avoid.